

ABSTRACT OF THE DISCLOSURE

Disclosed herein is a spin valve magnetoresistive sensor including a first conductor layer, a free ferromagnetic layer provided on the first conductor layer, a nonmagnetic intermediate layer provided on the free ferromagnetic layer, a pinned ferromagnetic layer provided on the nonmagnetic intermediate layer, an antiferromagnetic layer provided on the pinned ferromagnetic layer, and a second conductor layer provided on the antiferromagnetic layer. At least one of the free ferromagnetic layer and the pinned ferromagnetic layer has a thickness larger than that providing a maximum resistance change rate or resistance change amount in the case of passing a current in an in-plane direction of the at least one layer. That is, the thickness of at least one of the free ferromagnetic layer and the pinned ferromagnetic layer falls in the range of 3 nm to 12 nm.